

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

TERVES, LLC,)	Case No. 1:19-cv-1611
)	
Plaintiff,)	JUDGE DONALD C. NUGENT
)	
v.)	MAGISTRATE JUDGE
)	THOMAS M. PARKER
YUEYANG AEROSPACE NEW)	
MATERIALS CO., LTD., <i>et al.</i> ,)	<u>REPORT AND RECOMMENDATION</u>
)	<u>AND ORDER</u>
Defendants.)	

Nearly one year after filing its initial complaint in this patent infringement case, plaintiff Terves, LLC (“Terves”) filed motions seeking a preliminary injunction to enjoin the alleged infringement of [U.S. Patent No 10,329,653](#) (the “’653 Patent”) and U.S. Patent No. 10,689,740 (the “’740 patent”) by defendants Ecometal, Inc. (“Ecometal”) and Nick Yuan (collectively, the “defendants”).¹ [ECF Doc. 30](#) (sealed initial motion addressing the ’653 patent); [ECF Doc. 31](#) (redacted initial motion); [ECF Doc. 47](#) (supplemental motion addressing the ’740 patent).

Terves also filed a motion for an evidentiary hearing. [ECF Doc. 55](#). The Court referred Terves’s motions to me for preparation of a Report and Recommendation to recommend disposition on Terves’s motions for preliminary injunction, pursuant to [28 U.S.C. § 636\(b\)\(1\)\(B\)](#) and [Local Rule 72.1](#). Also pending before this court is Terves’s related “motion for leave to file rebuttal

¹ Terves’s motions for preliminary injunction do not appear to seek an injunction against defendant Yueyang Aerospace New Materials Co. Ltd. *See* [ECF Doc. 30](#); [ECF Doc. 31](#); [ECF Doc. 47](#).

expert report in response to Ecometal's October 15, 2020 supplemental expert report." [ECF Doc. 68](#).

For the reasons stated below, I will recommend that Terves's motions for preliminary injunction ([ECF Doc. 30](#); [ECF Doc. 31](#); [ECF Doc. 47](#)) be DENIED. Terves's "motion for leave to file rebuttal expert report in response to Ecometal's October 15, 2020 supplemental expert report" ([ECF Doc. 68](#)) will be DENIED. Further, the November 23, 2020, order granting Terves's motion for an evidentiary hearing will be VACATED on the court's own motion, and Terves's motion for an evidentiary hearing ([ECF Doc. 55](#)) will be DENIED.

I. Procedural History

On July 15, 2019, Terves filed a complaint alleging that Yueyang Aerospace New Materials Co. Ltd. ("YANM"), Ecometal, and Yuan imported Chinese-manufactured magnesium products that infringed on U.S. Patent No. 9,903,010 (the "'010 patent") and the '653 patent (disclosing certain dissolvable cast magnesium materials and the methods for producing such alloys). [ECF Doc. 1](#); *see also* [ECF Doc. 13](#) (first amended complaint). On November 18, 2019, the defendants filed an answer denying Terves's infringement claims and asserting affirmative defenses, including a challenge that the '010 patent and '653 patent were invalid or unenforceable. [ECF Doc. 17](#). During an April 28, 2020 telephone conference, the parties indicated that "[m]etals have been tested and [Terves] believes it proves infringement and [Terves] intends to file an injunction by end of week to halt importing of product." [ECF Doc. 28](#) (Minutes of Proceedings).

On April 29, 2020, Terves filed its initial motion for preliminary injunction, seeking to enjoin the defendants from infringing on the '653 patent. [ECF Doc. 30](#) (sealed); [ECF Doc. 31](#) (redacted) (filed May 1, 2020). Importantly, Terves stated in its initial motion, "Because patents

are presumed valid, a patent owner need only address patent validity if the alleged infringer attacks validity in response to the preliminary injunction motion. Terves will respond to an invalidity challenge if Ecometal opposes the motion on invalidity grounds.” [ECF Doc. 31-1 at 15](#) (citations omitted). On July 2, 2020², the defendants filed a response brief, opposing Terves’s motion on several grounds including invalidity and appending, among other things, an expert report from Dana Medlin, Ph.D., P.E., FASM, to support its arguments. [ECF Doc. 40](#) (redacted opposition brief); [ECF Doc. 41](#) (unredacted opposition brief) (filed on July 6, 2020); [ECF Doc. 42](#) (Dr. Medlin’s expert report) (sealed). Terves never filed a reply brief, and the time to do so expired on July 20, 2020 (14 days after defendants submitted their unredacted brief and Dr. Medlin’s expert report). *See generally* [CM/ECF for N.D. Ohio Case No. 1:19-cv-1611](#); *see also* [N.D. Ohio Local Rule 7.1\(e\)](#) (replies are due within 14 days after an opposition brief to a dispositive motion, and 7 days after an opposition brief to a non-dispositive motion).

On July 23, 2020, the court held a status conference. [ECF Doc. 43](#). During the conference, Terves sought leave to file a second amended complaint to add claims related to the ’740 patent, which was issued on June 23, 2020. [ECF Doc. 43](#). The court granted leave to amend the complaint and added that Terves might have needed to file an amended preliminary injunction motion. [EC Doc. 43](#). On July 24, 2020, Terves filed its second amended complaint, alleging that the defendants had violated the ’740 patent. [ECF Doc. 44](#). On August 7, 2020, Terves filed a “supplement” to its preliminary injunction motion, seeking to enjoin the defendants from infringing on the ’740 patent. [ECF Doc. 47](#). In the memorandum of support, Terves did not set forth *any* argument regarding patent validity. *See generally* [ECF Doc. 47-1](#).

² On May 29, 2020, the defendants filed a motion seeking to extend the time to file a response brief from June 1, 2020 (30 days after Terves had filed its redacted motion) to July 2, 2020. [ECF Doc. 33](#) (noting that Terves had agreed to the extension). The court granted the defendants’ extension motion. [ECF Doc. 34](#).

On October 15, 2020,³ the defendants filed their response in opposition to Terves's supplement. [ECF Doc. 64](#). The defendant argued, among other things, that the '740 patent was invalid on substantially the same grounds as it had argued the '653 patent was invalid and submitted a similar report from Dr. Medlin in support of that argument. [ECF Doc. 64 at 2-6](#); [ECF Doc. 65](#) (Dr. Medlin expert report). Terves did not file a reply, and the time to do so expired on October 29, 2020. *See generally* [CM/ECF for N.D. Ohio Case No. 1:19-cv-1611](#); *see also* [N.D. Ohio Local Rule 7.1\(e\)](#).

On November 23, 2020, the court held a status conference to discuss the pending motions and the parties' availability for an evidentiary hearing. During that status conference, the court brought up the lack of a responsive argument on the issue of patent validity in the briefing from Terves. Terves represented that it had a responsive expert report that it intended to file. The court noted that the defendants might find such a report surprising when Terves had missed its deadlines to file a reply brief, to which such an expert report could have been appended to support an argument on the validity issue. The defendants agreed, noting that Terves had missed the 14-day deadline provided in Local Rule 7.1(e). The court instructed Terves that, if it wished to avoid potential waiver of that issue, it should seek leave to file a reply brief out of rule. The court also warned that Terves should do so quickly. To remind Terves of the need to seek leave to file a reply brief out of rule, the court stated in its minutes:

³ The defendants' opposition brief was initially due on September 6, 2020. *See* [N.D. Ohio L.R. 7.1\(d\)](#). On August 19, 2020, the defendants asked the court to hold the supplemental motion briefing in abeyance until pleadings were answered and the parties had discussed any claim construction issues. [ECF Doc. 51](#). The court held a status conference on October 1, 2020, after which the defendants sought clarification regarding the motion briefing schedule for Terves's supplemental preliminary injunction motion. [ECF Doc. 59](#) (request for clarification); [ECF Doc. 60](#) (response); [ECF Doc. 61](#) (reply); [ECF Doc. 63](#) (Minutes of Proceedings). On October 2, 2020, the court entered a marginal order, granting the defendants leave to file an opposition brief to Terves's supplemental preliminary injunction motion by October 15, 2020. [ECF Doc. 62](#).

[D]uring the telephone status conference, counsel for plaintiff indicated that they would be submitting an expert report on the issue of validity responding to the expert report filed with defendants' October 15, 2020 supplement response brief. The court noted that the deadline to file a *reply* to the October 15, 2020 response brief has passed, and that plaintiff would be required to seek leave to file a *reply* out of rule before doing so.

CM/ECF for N.D. Ohio Case No. 1:19-cv-1611, Minutes of Proceedings dated Nov. 23, 2020 (emphasis added). Based upon the parties representations during the status conference – and the expectation that Terves would, as the court directed, seek leave to file a reply setting forth its arguments on the issue of validity – the court granted Terves's motion for an evidentiary hearing and scheduled a hearing for December 16, 2020. CM/ECF for N.D. Ohio Case No. 1:19-cv-1611, Order dated Nov. 23, 2020.

On November 24, 2020, Terves filed an “unopposed motion for leave to file rebuttal expert report in response to Ecometal’s October 15, 2020 supplemental expert report.” ECF Doc. 68.

II. Facts

A. Terves and Ecometal’s Magnesium Alloy Market Activity

1. Development of and Market for Terves Magnesium

Terves is a research-based developer and manufacturer of engineered materials, especially for oil and gas drilling. ECF Doc. 31-7 at 2.⁴ According to Terves founder, president, and CEO Andrew Sherman, Terves is the only U.S. integrated producer of wrought magnesium and operates the only foundry in the U.S. that both produces magnesium billets and extrudes them in its own facility to form wrought magnesium. ECF Doc. 31-7 at 2-3. In 2013 and 2014, Terves developed magnesium materials that could be dissolved at a controlled rate in a brine,

⁴ Although I cite to the redacted version of Sherman’s declaration (ECF Doc. 31-7), I have also reviewed the unredacted version reflecting the same information in greater detail (ECF Doc. 30-1).

such as potassium chloride (the “Terves Magnesium”). ECF Doc. 31-7 at 3-5. The Terves Magnesium, which used cast materials, allowed for improved control of dissolution rates, increased strength, and increased reliability over previous drilling tools, which were made using powder metallurgy or plastic products. ECF Doc. 31-7 at 4-5. Terves Magnesium, unlike powder magnesium, was also more scalable at lower costs, making fully dissolvable frac plugs and frac balls available to larger well service companies. ECF Doc. 31-7 at 5-6. Terves Magnesium received significant industry recognition. ECF Doc. 31-7 at 6. Industry leaders purchased Terves Magnesium to use in their products. ECF Doc. 31-7 at 6-7. Industry competitors also took notice. ECF Doc. 31-7 at 7. According to Sherman, in 2015 or 2016, competitors reverse engineered Terves Magnesium and began manufacturing copycat alloys in China for import to the U.S. ECF Doc. 31-7 at 7. Terves obtained samples of the copycat alloys and found that they matched the TA-100 grade of Terves Magnesium. ECF Doc. 31-7 at 7.

In 2016, the lower-priced Chinese magnesium products began to damage Terves’s ability to recoup its R&D expenses. ECF Doc. 31-7 at 9. One of Terves’s largest dissolvable wrought magnesium clients began purchasing dissolvable wrought magnesium from a different, unknown supplier. ECF Doc. 31-7 at 9; *see also* ECF Doc. 41-6 at 6 (sealed). Terves’s revenue declined significantly from 2015 to 2016 and from 2016 to 2017. ECF Doc. 31-7 at 9-10. Terves developed some new products, its revenues climbed in 2018, and its obtained financing for expanded operations and equipment. ECF Doc. 31-7 at 10; *see also* ECF Doc. 41-6 at 7 (sealed). In late 2018, Terves lost another major purchaser to an unknown supplier. ECF Doc. 31-7 at 10; *see also* ECF Doc. 41-6 at 13. Sherman stated at deposition that he “ma[d]e a reasonable assumption” that both major former clients were purchasing an infringing product. ECF Doc. 41-6 at 13 (sealed). Sherman said that there was no known way to make dissolvable wrought

magnesium that would meet industry needs other than the methods disclosed in Terves's patents, but some other competitors used powder metallurgy and dissolvable aluminum to manufacture oil drilling tools, such as frac plugs, without infringing on Terves's patents. ECF Doc. 41-6 at 12-13 (sealed). Sherman said that, despite the market for dissolvable magnesium growing, Terves again had reduced revenues from 2018 to 2019. ECF Doc. 31-7 at 10; *see also* ECF Doc. 41-6 at 14-17 (indicating that Sherman had calculated a total market of approximately \$54 million in 2018 for dissolvable magnesium based on sales of frac plugs and an estimate of how much dissolvable magnesium would be in those frac plugs). According to Sherman, losing another major customer – coupled with industry pressures caused by COVID-19 and the low price of oil – could threaten the continued existence of Terves and the employment of its personnel. ECF Doc. 31-7 at 11, 14.

2. Ecometal's Involvement in the Dissolvable Magnesium Industry

Ecometal is a Canadian company formed in 2010 for the purpose of sourcing lightweight metals, functional alloys, ultra-strong alloys, rare earth metals, and master alloys, including the importation of Chinese master alloys into North America. ECF Doc. 41-1 at 2-3; *see also* ECF Doc. 30-1 at 12-13. Nick Yuan is the CEO of Ecometal. ECF Doc. 41-1 at 2; *see also* ECF Doc. 30-1 at 12-13. According to Yuan's declaration, cast magnesium foundries in China were producing wrought dissolvable magnesium containing copper and nickel as early as 2010 and no later than the end of 2013. ECF Doc. 41-1 at 3. In 2012, a Chinese customer asked Yuan to source dissolving materials for frac balls. ECF Doc. 41-1 at 3. Yuan first sourced dissolvable polymer materials, but he switched to dissolvable magnesium in early 2013. ECF Doc. 41-1 at 3. Yuan stated in his declaration that Ecometal sells dissolvable magnesium only to one client (the "single-buyer"), which in turn sells only to a single end-user (the "end-user"). ECF Doc. 41-1 at

3-4; *see also* ECF Doc. 41-2 at 2-3 (declaration of Brian Wilkinson filed under seal). Neither Ecometal's single-buyer nor the end-user had ever purchased materials from Terves, but Sherman stated at deposition that Terves had at some point tried unsuccessfully to sell to Ecometal's end-user in the past and Terves considered the end-user a prospective customer. ECF Doc. 41-6 at 7; *see also* ECF Doc. 41-8 (Terves customer records filed under seal); *see also* ECF Doc. 41-2 (declaration of Brian Wilkinson).

3. Terves's Suspicion of Infringement by Ecometal

According to Sherman, Terves learned that YANM was the largest importer of dissolvable magnesium in 2018 and 2019, and that Ecometal and/or Magnesium Machine, LLC ("MMP") received that material. ECF Doc. 31-7 at 8. In his declaration, Sherman stated that Ecometal had imported 231 tons of magnesium between January 2017 and January 2020 at an average declared value below U.S. raw materials costs. ECF Doc. 31-7 at 8, 15; *see also* 41-1 at 4 (Yuan declaration providing a similar, consistent dissolvable magnesium import tonnage figure for 2015 through July 2020). Sherman said that the importation of these volumes of low-priced magnesium has caused price erosion and reduced market share of the Terves Magnesium, from 2015 to 2019. ECF Doc. 31-7 at 11-12. Further, according to Sherman, Ecometal originally identified itself and MMP as the consignee for shipments sent to MMP's business address, but Ecometal removed its name from importation records and sent shipments to the private residence of MMP's owner after Terves sued. ECF Doc. 31-7 at 8-9.

B. Evaluation of Ecometal's Products

1. Testing by Terves

During the course of this litigation, Terves obtained samples of Ecometal's dissolvable wrought magnesium products and sent them to metallurgical expert Lee Swanger, Ph.D. for

testing and evaluation. [ECF Doc. 31-1 at 14](#); *see also* [ECF Doc. 30-2](#) (Dr. Swanger's report addressing the '653 patent) (sealed); [ECF Doc. 48](#) (Dr. Swanger's report addressing the '740 patent) (sealed). In his reports, Dr. Swanger opined that seven grades of Ecometal's dissolvable wrought magnesium infringed on the '653 patent and '740 patent, but three grades of Ecometal's dissolvable wrought magnesium did not. [ECF Doc. 31-1 at 4](#); [ECF Doc. 48 at 3](#) (identifying the same infringing grades for the '740 patent as identified for the '653 patent). Dr. Swanger performed immersion corrosion testing by placing each sample in a 1000 mL beaker with 800 mL of 3% potassium chloride solution, adjusting the temperature to 90°C (194°F), and measuring the final dimensions and remaining mass of the samples after 6 hours (or after 3 hours if the dissolution rate was particularly high). [ECF Doc. 30-2 at 6, 26](#); *see also* [ECF Doc. 48 at 4, 6](#) (indicating that Dr. Swanger's '740 report relied on the same testing conducted and results obtained for the '653 report). Dr. Swanger also performed: (1) metallurgical analysis of each alloy by examining the alloy with an optical microscope and scanning electron microscope ("SEM"); (2) elemental analysis by energy dispersive x-ray spectroscopy ("EDS"); and (3) elemental analysis by using inductively coupled plasma-optical emission spectroscopy. [ECF Doc. 30-2 at 7-9](#).

Dr. Swanger found that the samples had the following elemental compositions by weight percentage:

	AJM006	AJM010	AMJ012	AJM016	AJM017	AJM018	AJM023
Mg	91.28	99.66	96.79	94.73	97.21	98.01	95.93
Al	7.59	0.07	0.01	4.04	0.01		0.01
Zr						0.07	0.02
Y	0.01		0.53	0.02			
Ca			0.02				
Ni	0.12	0.17	0.22	0.11	0.11	0.62	2.89
Cu	0.09		0.78	0.06	0.72	0.89	
Nd	0.04			0.06			0.17
Gd	0.03	0.08	0.61	0.07	1.92	0.31	0.45

Zn	0.69	0.01	1.03	0.83	0.02	0.01	0.52
Pb						0.01	
Sn						0.06	
Mn	0.15	0.01	0.01	0.08	0.01	0.02	0.01

ECF Doc. 30-2 at 25; ECF Doc. 48 at 5. Dr. Swanger also calculated the following corrosion rates: (1) 30.85 mg/cm²*hour over 6 hours for AJM006; (2) 36.38 mg/cm²*hour over 6 hours for AJM010; (3) 34.47 mg/cm²*hour over 6 hours for AJM012; (4) 20.04 mg/cm²*hour over 6 hours for AJM016; (5) 39.39 mg/cm²*hour over 6 hours for AJM017; (6) 67.06 to 85.80 mg/cm²*hour over 3 hours for AJM018; and (7) 144.87 mg/cm²*hour over 3 hours for AJM023. ECF Doc. 30-2 at 26; ECF Doc. 48 at 6. He also determined that SEM analyses for each of the samples showed that particle sizes were predominantly or entirely under 50 µm, and that such particles constituted a plurality. ECF Doc. 48 at 6-10; *see also* ECF Doc. 48 at 2 (explaining that “plurality” means “two or more”).

When reviewing his SEM imaging at deposition, Dr. Swanger explained that the bright particles in his imaging demonstrated a higher atomic number than the gray matrix. ECF Doc. 42-8 at 8. Dr. Swanger said that, with the AJM006 sample, the bright particles were understood to be nickel rich or copper rich particles because: (1) the composition of the alloy included nickel and copper; and (2) copper and nickel have higher atomic numbers than magnesium or the major aluminum additive. ECF Doc. 42-8 at 8. Dr. Swanger said that EDS would show that those bright particles were galvanically-active intermetallic particles containing both magnesium and Mg₂Ni (the only possible intermetallic compound between nickel and magnesium when the weight percentage of nickel in the magnesium compound was 0.12 and the materials were close to equilibrium). ECF Doc. 41-10 at 6-18; ECF Doc. 42-8 at 8-10. Dr. Swanger also explained that pure copper and nickel had higher melting point temperatures than a solidus temperature of magnesium. ECF Doc. 41-10 at 19.

Based on these results, Dr. Swanger opined that the following Ecometal alloys infringed on the following claims:

	'653 Patent Claims	'740 Patent Claims
AJM006	1, 4, 45, 46, 47, 49, 52, 54, 61, 69	19, 20, 23, 24, 27, 35, 52, 53, 55, 76, 79, 80
AJM010	1, 4, 49, 52, 61, 69	19, 20, 23, 24, 27, 35, 52, 53, 55, 76, 79, 80
AJM012	1, 4, 45, 46, 47, 49, 52, 54, 61, 69	19, 20, 23, 24, 27, 35, 52, 53, 55, 76, 79, 80
AJM016	1, 4, 45, 46, 47, 49, 52, 61, 69	19, 20, 23, 24, 27, 35, 52, 53, 55, 76, 79, 80
AJM017	1, 4, 49, 52, 61, 69	19, 20, 23, 24, 27, 35, 52, 53, 55, 76, 79, 80
AJM018	1, 4, 45, 46, 49, 52, 54, 61, 69	19, 20, 23, 24, 27, 35, 52, 53, 55, 76, 79, 80
AJM023	1, 4, 45, 46, 49, 52, 54, 61, 69	19, 20, 23, 24, 27, 35, 52, 53, 55, 76, 79, 80

ECF Doc. 30-2 at 4, 10-11, 31-68; ECF Doc. 48 at 10, 44-61.

2. The Defendants' Responsive Evidence

According to Yuan's declaration, the dissolvable wrought magnesium that Ecometal imports is manufactured by melting magnesium ingots and adding "master alloys" containing copper and/or nickel. ECF Doc. 41-1 at 3-4; *see also* ECF Doc. 41-1 at 20-22 (English translation of Ecometal's manufacturer's bar casting processes for soluble magnesium alloy) (sealed). At deposition, Ecometal asked Dr. Swanger whether he was familiar with master alloys. ECF Doc. 41-10 at 19. Dr. Swanger explained that master alloys were pre-alloys that included the desired amount of a particular element that would be melted into a metal before casting to obtain desired properties. *See* ECF Doc. 41-10 at 19 (giving the example of mixing master alloy ferrosilicon with steel before casting a steel ingot, so the silicon in the master alloy could assist with controlling grain size or other properties that the alloy designer wanted). Dr. Swanger said that the melting point temperature of a master alloy (e.g., ferrosilicon) would be different from the melting point of the pure element (e.g., silicon) based on the phase diagram for the component metals (e.g., the iron silicon phase diagram). ECF Doc. 41-10 at 19. Dr. Swanger said that he was not familiar with the use of any master alloys in the production of the cast magnesium he had evaluated, but he would not be surprised to learn that master alloys

were used. [ECF Doc. 41-10 at 19, 22](#). When reviewing the claims in the '653 patent, Dr. Swanger said that he did not see any disclosure of adding a master alloy containing an element that would form a galvanically-active intermetallic phase to a magnesium alloy and that the patent claims described only the galvanically-active particles present in the final composite, “[not] . . . any way to get there.” [ECF Doc. 41-10 at 20](#).

On July 2, 2020, the defendants’ metallurgical expert Dana Medlin, Ph.D., P.E., FASM, opined that none of the seven grades identified by Terves infringed on the '653 patent. [ECF Doc. 42](#). Dr. Medlin explained that, although production of those seven grades involved the addition of a material that included copper, nickel, iron, and/or cobalt, those materials were added as master alloys, such as MgNi25 (75% by weight magnesium and 25% by weight nickel). [ECF Doc. 42 at 7](#). Dr. Medlin said the use of master alloys was significant because the melting point temperature of those master alloys would be lower than the melting point of both pure magnesium and the pure additive metal. [ECF Doc. 42 at 8-9](#). For example, MgNi25 would have a solidus temperature of 506°C and liquidus temperature of 580°C, whereas the melting point temperature of pure magnesium was 650°C and the melting point temperature of pure nickel was 1455°C). [ECF Doc. 42 at 8-9](#). And MgCu50 – the master alloy used to introduce copper to the copper-containing grades – had a solidus temperature of 485°C and liquidus temperature of 560°C. [ECF Doc. 42 at 10](#). Dr. Medlin said that, because the solidus and liquidus temperatures of the MgNi25 and MgCu50 used in the production of the seven grades identified by Terves were lower than the melting point temperature of pure magnesium, they did not meet Claim 1 of the '653 patent (i.e., “said additive material having a greater melting point temperature than a solidus temperature of said magnesium”). [ECF Doc. 42 at 8-11](#).

Dr. Medlin also opined that Dr. Swanger's EDS analysis did not demonstrate that an intermetallic compound was present. [ECF Doc. 42 at 11](#). Dr. Medlin said that Dr. Swanger had performed only "semi-quantitative" analysis and formed assumptions based on his understanding of phase diagrams, but did not perform "any measurable laboratory technique, such as Electron Backscatter Diffraction (EBSD) or X-Ray Diffraction (XRD)." [ECF Doc. 42 at 11](#). Dr. Medlin said that such analysis failed to prove that the microconstituents in the alloys were intermetallic compounds instead of residual master alloys added to the melt. [ECF Doc. 42 at 11](#). Thus, Dr. Medlin concluded that Dr. Swanger's analysis did not demonstrate that the galvanically-active intermetallic particle was formed by the additive material. [ECF Doc. 42 at 11](#).

On October 15, 2020, Dr. Medlin issued a report, opining that Dr. Swanger had failed to demonstrate that the seven grades identified by Terves infringed on the '740 patent. [ECF Doc. 65 at 3-5](#). Specifically, Dr. Medlin opined that Dr. Swanger failed to show that the seven grades met Claim 19's limitation – that "a plurality of particles of [the] in situ precipitate [including the additive material have] a size of no more than 50 μm ." [ECF Doc. 65 at 3](#) (quoting U.S. Patent No. 10,689,740 col. 40). Dr. Medlin explained that a person of ordinary skill in the art would understand that the white "specks" shown in the images Dr. Swanger provided of the seven grades could be something other than an in situ precipitate formed by the additive material, such as an inclusion. [ECF Doc. 65 at 4](#). Further, Dr. Medlin said that the two-dimensional cross-sections Dr. Swanger provided for AJM012, AJM018, and AJM023 ([ECF Doc. 48 at 6-9](#)) showed "cloudlike formations" for the particles and would not allow a person of ordinary skill in the art to determine whether any two particles were no more than 50 μm . [ECF Doc. 65 at 4-5](#).

C. The Relevant Patents and Prior Art

1. Patent No. 10,329,653

On June 25, 2019, the U.S. Patent and Trademark Office issued the '653 patent for “galvanically-active in situ formed particles for controlled rate dissolving tools,” naming Terves as the assignee. [ECF Doc. 1-2 at 1](#); U.S. Patent No. 10,329,653 (filed Jul. 5, 2017) (issued Jun. 25, 2019). The invention seeks to reduce the costs of manufacturing and using non-drillable tools, such as sleeves, frac balls, and hydraulic actuating tools used in the oil and gas drilling industries – while also maintaining or improving the strength and reliability of those tools – by creating a novel magnesium alloy that allows for the controlled dissolution of those components in a brine solution (3% potassium chloride) at under certain environmental conditions (90°C). [ECF Doc. 1-2 at 9](#); U.S. Patent No. 10,329,653 col. 1 l. 18-44. To that end, the '653 patent discloses magnesium alloys that can be created by mixing into molten magnesium certain weight ranges of solid additive materials (“AM”) or secondary metals (“SM”) that have a higher melting point than magnesium at a temperature lower than the melting point of those AM or SM. [ECF Doc. 1-2 at 9-17](#); U.S. Patent No. 10,329,653 col. 2-17. This mixture would result in the formation of solid $AMMg_x/SMMg_x$ particles, which would be present in an *in-situ* precipitate after cooling. [ECF Doc. 1-2 at 9-17](#); U.S. Patent No. 10,329,653 col. 2-17. The unalloyed additive material or secondary metals would be formed in the solid magnesium or magnesium alloy. [ECF Doc. 1-2 at 9-17](#); U.S. Patent No. 10,329,653 col. 2-17.

The '653 patent makes the following claims relevant to Terves's motion for preliminary injunction:

1. A magnesium composite that includes in situ precipitation of galvanically-active intermetallic phases to enable controlled dissolution of said magnesium composite, said magnesium composite comprising a mixture of magnesium or a magnesium alloy and an additive material, said additive

material having a greater melting point temperature than a solidus temperature of said magnesium, said additive material constituting about 0.05 wt. %-45 wt. % of said mixture, said additive material forming precipitant in said magnesium composite, said additive material includes one or more metals selected from the group consisting of copper, nickel, iron, and cobalt, said magnesium composite has a dissolution rate of at least 5 mg/cm²/hr. in 3 wt. % KCl water mixture at 90° C.

4. The magnesium composite as defined in claim 1, wherein said additive material includes nickel, said nickel constitutes about 0.05-35 wt. % of said magnesium composite, said nickel forms galvanically-active in situ precipitate in said magnesium composite.
45. A dissolvable magnesium alloy composite for use in a ball or other tool component in a well drilling or completion operation, said dissolvable magnesium alloy composite comprising over 50 wt. % magnesium; one or more metals selected from the group consisting of 0.1-3 wt. % zinc, 0.01-1 wt. % zirconium, 0.05-1 wt. % manganese, 0.0002-0.04 wt. % boron, and 0.4-0.7 wt. % bismuth; and about 0.05-45 wt. % of a secondary metal to form a galvanically-active intermetallic particle that promotes corrosion of said dissolvable magnesium alloy composite, said secondary metal including one or more metals selected from the group consisting of copper, nickel, and cobalt, said magnesium alloy composite has a dissolution rate of at least 5 mg/cm²/hr. in 3 wt. % KCl water mixture at 90° C.
46. The dissolvable magnesium alloy composite as defined in claim 45, wherein a dissolution rate of said magnesium alloy composite is 5-325 mg/cm²/hr. in 3 wt. % KCl water mixture at 90° C.
49. A magnesium composite that includes in situ precipitation of galvanically-active intermetallic phases to enable controlled dissolution of said magnesium composite, said magnesium composite comprising a mixture of magnesium or a magnesium alloy and an additive material, said additive material constituting about 0.05-45 wt. % of said mixture, said additive material includes one or more metals selected from the group consisting of copper, nickel, titanium, iron, and cobalt, said magnesium composite including in situ precipitation of galvanically-active intermetallic phases that include said additive material, said additive material located in sufficient quantities in said galvanically-active intermetallic phases so as to obtain a composition and morphology of said galvanically-active intermetallic phases such that a galvanic corrosion rate along said galvanically-active intermetallic phases causes said magnesium composite to have a dissolution rate of at least at least 5 mg/cm²/hr. in 3 wt. % KCl water mixture at 90° C.

52. The magnesium composite as defined in claim 49, wherein said magnesium alloy includes over 50 wt. % magnesium, and one or more metals selected from the group consisting of aluminum, boron, bismuth, zinc, zirconium, and manganese.
54. The magnesium composite as defined in claim 49, wherein said magnesium alloy includes over 50 wt. % magnesium, and one or more metals selected from the group consisting of aluminum in an amount of about 0.5-10 wt. %, zinc in an amount of about 0.1-3 wt. %, zirconium in an amount of about 0.01-1 wt. %, manganese in an amount of about 0.15-2 wt. %, boron in an amount of about 0.0002-0.04 wt. %, and bismuth in an amount of about 0.4-0.7 wt. %.
61. The magnesium composite as defined in claim 49, wherein said additive material includes nickel, said nickel constitutes about 0.05-35 wt. % of said magnesium composite, said nickel forms galvanically-active in situ precipitate in said magnesium composite.
69. The magnesium composite as defined in claim 49, wherein said additive material has a melting point temperature that is 100° C. greater than a melting temperature of said magnesium or magnesium alloy.

[ECF Doc. 1-2 at 17-20](#); U.S. Patent No. 10,329,653 col. 18-19, 22-24.

2. Patent No. 10,698,740

On June 23, 2020, the U.S. Patent and Trademark Office issued the '740 patent for “galvanically-active in situ formed particles for controlled rate dissolving tools,” naming Terves as the assignee. [ECF Doc. 44-3](#); U.S. Patent No. 10,689,740 (filed Oct. 12, 2018) (issued Jun. 23, 2020). Like the '653 patent, the invention disclosed in the '740 patent seeks reduce the costs to manufacture and use non-drillable completion tools for oil and gas drilling by creating a novel magnesium alloy that allows for the controlled dissolution of those components in a brine solution (3% potassium chloride) at under certain environmental conditions (90°C). [ECF Doc. 44-3 at 9-31](#); U.S. Patent No. 10,689,740 col. 1-46. To that end, the '740 patent discloses magnesium alloys that can be created by mixing into molten magnesium certain weight ranges of solid AM or SM at temperatures lower than or greater than the melting point of one or more of

the elements of the AM or SM. [ECF Doc. 44-3 at 9-24](#); U.S. Patent No. 10,689,740 col. 2-31.

In any aspect, the alloyed AM and SM in the molten magnesium would precipitate during the cooling process, resulting in *in situ* particle formation in the composite in such a manner that would allow for a controlled dissolution rate when exposed to conductive fluids (such as a 3% potassium chloride solution). [ECF Doc. 44-3 at 9-24](#); U.S. Patent No. 10,689,740 col. 2-31.

The '740 patent makes the following claims relevant to Terves's motion for preliminary injunction:

19. A dissolvable magnesium cast composite comprising a mixture of magnesium or a magnesium alloy and an additive material, said additive material includes one or more metals selected from the group consisting of a) copper wherein said copper constitutes at least 0.01 wt. % of said dissolvable magnesium cast composite, b) nickel wherein said nickel constitutes at least 0.01 wt. % of said dissolvable magnesium cast composite, and c) cobalt wherein said cobalt constitutes at least 0.01 wt. % of said dissolvable magnesium cast composite, said magnesium composite includes *in situ* precipitate, said *in situ* precipitate includes said additive material, a plurality of particles of said *in situ* precipitate having a size of no more than 50 μm , said magnesium composite has a dissolution rate of at least 5 mg/cm²/hr. in 3 wt. % KCl water mixture at 90° C.
20. The dissolvable magnesium cast composite as defined in claim 19, wherein said magnesium composite includes at least 85 wt. % magnesium.
23. The dissolvable magnesium cast composite as defined in claim 19, wherein said magnesium composite includes no more than 10 wt. % aluminum.
24. The dissolvable magnesium cast composite as defined in claim 20, wherein said magnesium composite includes no more than 10 wt. % aluminum.
27. The dissolvable magnesium cast composite as defined in claim 23, wherein said magnesium composite includes at least 50 wt. % magnesium.
35. The dissolvable magnesium cast composite as defined in claim 27, wherein said magnesium alloy includes over 50 wt. % magnesium and one or more metals selected from the group consisting of aluminum, boron, bismuth, zinc, zirconium, and manganese.

52. The dissolvable magnesium cast composite as defined in claim 19, wherein said additive material includes nickel, said nickel constitutes 0.1-23.5 wt. % of said dissolvable magnesium cast composite.
53. The dissolvable magnesium cast composite as defined in claim 20, wherein said additive material includes nickel, said nickel constitutes 0.1-23.5 wt. % of said dissolvable magnesium cast composite.
55. The dissolvable magnesium cast composite as defined in claim 23, wherein said additive material includes nickel, said nickel constitutes 0.1-23.5 wt. % of said dissolvable magnesium cast composite.
76. The dissolvable magnesium cast composite as defined in claim 19, wherein said additive material includes one or more metal materials selected from the group consisting of 0.1-35 wt. % copper, 0.1-24.5 wt. % nickel and 0.1-20 wt. % cobalt.
79. The dissolvable magnesium cast composite as defined in claim 23, wherein said additive material includes one or more metal materials selected from the group consisting of 0.1-35 wt. % copper, 0.1-24.5 wt. % nickel and 0.1-20 wt. % cobalt.

ECF Doc. 44-3 at 28-30; U.S. Patent No. 10,689,740 col. 40-42, 44.

3. Prior Art Analysis by Dr. Medlin

In his expert reports, Dr. Medlin stated that he understood that the '740 patent was a "continuation in part" of the '653 patent; that the '653 patent was a "division" of the '010 patent and related to Application No. 61/981,425; and that the time of the invention for purposes of his declaration was April 18, 2014 (the filing date for Application No. 61/981,425). ECF Doc. 42 at 2, 6; ECF Doc. 65 at 2-3. Dr. Medlin stated that he reviewed several pieces of prior art related to dissolvable magnesium and the addition of certain materials to increase corrosiveness or dissolution rate, most notably: (1) Chinese Pat. Pub. No. CN 103343271 (filed July 8, 2013) (issued Oct. 9, 2013) (the "Xiao patent"), (ECF Doc. 42-3) (English translation); and (2) S.F. Hassan & M. Gupta, *Development of high strength magnesium based composites using elemental nickel particulates as reinforcement*, 37 J. MATERIALS SCI. 2467-74 (2002) (the

“Hassan-Gupta article”), (ECF Doc. 42-5). ECF Doc. 42 at 11; ECF Doc. 65 at 5. Dr. Medlin opined that the Xiao patent and Hassan-Gupta article each independently disclosed every element of the ’653 patent claims at issue in Terves’s preliminary injunction motion. ECF Doc. 42 at 12-13; *see also* ECF Doc. 42-4 (chart comparing Xiao patent disclosures to ’653 patent claims); ECF Doc. 42-6 (chart comparing Hassan-Gupta article disclosures to ’653 patent claims). Dr. Medlin also opined that: (1) the Xiao patent disclosed every element of Claim 19 of the ’740 patent (the only independent claim alleged to be infringed in Terves’s preliminary injunction motion), except the limitation that the *in situ* precipitate particles be no greater than 50 μm ; and (2) the Hassan-Gupta article disclosed the limitation that the *in situ* precipitate particles be no greater than 50 μm . ECF Doc. 65 at 6-9; *see also* ECF Doc. 65-2 (chart comparing the Xiao patent and Hassan-Gupta article disclosures to ’740 patent claims). Accordingly, Dr. Medlin opined that a person of ordinary skill in the art would understand that the Xiao patent and Hassan-Gupta article anticipated or made obvious the claims at issue in the ’653 patent and ’740 patent. ECF Doc. 42 at 12-13; ECF Doc. 65 at 6-9.

III. Motion for Preliminary Injunction

A. Preliminary Injunction Standard of Review for Patent Cases

A preliminary injunction is an extraordinary equitable remedy committed to the trial court’s discretion. *Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1375 (Fed. Cir. 2009); *see also* *LEGO v. ZURU Inc.*, 799 F. App’x 823, 827 (Fed. Cir. Jan. 15, 2020) (noting that the grant or denial of a motion for preliminary injunction is reviewed for abuse of discretion). “‘The purpose of a preliminary injunction is to preserve the relative positions of the parties until a trial on the merits can be held.’” *Indivior Inc. v. Dr. Reddy’s Labs., S.A.*, 752 F. App’x 1024, 1035 (Fed. Cir. 2018) (quoting *Univ. of Tex. V. Camenisch*, 451 U.S. 390, 395

(1981)). In determining whether to exercise its discretion to issue a preliminary, trial courts look to four factors: (1) the likelihood of success on the merits; (2) the likelihood that the movant will suffer irreparable harm without preliminary relief; (3) the balance of equities; and (4) the public interest. *Titan Tire Corp.*, [566 F.3d at 1375-76](#) (citing *Winter v. Natural Res. Def. Council, Inc.*, [555 U.S. 7](#) (2008)); *LEGO*, [799 F. App'x at 827](#). Although courts weigh each factor, “both case law and logic require that a movant cannot be granted a preliminary injunction unless it establishes both of the two first factors, *i.e.*, likelihood of success on the merits and irreparable harm.” *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, [239 F.3d 1343, 1350](#) (Fed. Cir. 2001).

B. Likelihood of Success on the Merits

1. The Parties Arguments

Terves argues that it is likely to succeed on the merits of its claim that defendants infringed on the '653 patent because Dr. Swanger's immersion corrosion testing and inductively coupled plasma-optical emission spectroscopy of samples of the accused products show infringement of claims 1, 4, 45, 46, 47, 49, 52, 54, 61, and 69 of the '653 patent. [ECF Doc. 31-1 at 6, 9-11](#). Terves also argues that is likely to succeed on the merits of its claim that the defendants infringed on the '740 patent because the same testing by Dr. Swanger shows that Ecometal's products infringe on claims 19, 20, 23, 24, 27, 35, 52, 53, 55, 76, 79, and 80. [ECF Doc. 47-1 at 1-2](#). As discussed above, Terves also states that it did not include a patent validity argument in its initial brief because the '653 patent is presumptively valid, and that it would “respond to an invalidity challenge if Ecometal oppose[d] the motion on invalidity grounds.” [ECF Doc. 31-1 at 15](#); *see also* [ECF Doc. 47](#) (not including *any* argument or statement regarding patent validity).

The defendants respond that Terves has not shown a likelihood of success on the merits of its claims because: (1) the pre-existing Xiao patent and the Gupta article disclosed or made obvious the relevant claims from the '653 and '740 patents; (2) several terms of the '653 patent are indefinite; and (3) Terves has not shown that the accused products actually infringe any claims of the '653 or '740 patents. [ECF Doc. 40 at 20-25](#); [ECF Doc. 64 at 2-9](#). Related to their invalidity argument, the defendants also argue that the '740 patent is unenforceable due to Terves's inequitable conduct in prosecuting that patent (neglecting to provide the USPTO with a copy of the Xiao patent, inform the USPTO of this litigation, and provide material information arising from this litigation). [ECF Doc. 64 at 6-7](#). The defendants also argue that Dr. Swanger's opinion regarding "additive material" is flawed because it interprets an independent claim in a way that is inconsistent with a dependent claim. [ECF Doc. 64 at 9-10](#).

Terves has not filed a reply brief addressing the validity or inequitable conduct challenges raised in the defendants' response briefs, and the time for doing so has expired. *See generally* [CM/ECF for N.D. Ohio Case No. 1:19-cv-1611](#); *see also* [N.D. Ohio L.R. 7.1\(e\)](#).

2. Likelihood of Success on the Merits Standard

To show likelihood of success on the merits, the movant must show that: (1) it will likely prove infringement; and (2) the patent will likely withstand any validity challenges. *Titan Tire Corp.*, [566 F.3d at 1376](#) (citing *Genentech, Inc. v. Novo Nordisk A/S*, [108 F.3d 1361, 1364](#) (Fed. Cir. 1997)). The infringement and validity analyses are conducted on a claim-by-claim basis. *Amazon.com, Inc.*, [239 F.3d at 1351](#). If the defendant raises "a substantial question concerning either infringement or validity, *i.e.*, asserts an infringement or invalidity defense that the patentee cannot prove 'lacks substantial merit,' the preliminary injunction should not issue." *Id.* at [1350-51](#).

3. Validity and Unenforceability

At the preliminary injunction stage, the question of patent validity requires a careful balancing act. On one hand, issued patents are presumptively valid under [35 U.S.C. § 282](#) at all stages of the litigation. *Titan Tire Corp.*, [566 F.3d at 1376-77](#). At the trial stage, the alleged infringer has the ultimate burden to prove a patent is invalid by clear and convincing evidence. *Purdue Pharma L.P. v. Boehringer Ingelheim GmbH*, [237 F.3d 1359, 1365](#) (Fed. Cir. 2001). But at the preliminary junction stage, the movant (patent holder) has burden to prove likelihood of success on the merits and, thus, must show that the alleged infringer likely will not prove that the patent is invalid. *Id.* If the alleged infringer does not point to any evidence of invalidity, the presumption of validity satisfies this burden. *Id.* If, the alleged infringer argues that a patent is invalid and with supporting evidence that might raise a “substantial question” concerning validity, the movant has the burden to persuade the court that the alleged infringer’s validity challenge lacks substantial merit. *Titan Tire Corp.*, [556 F.3d at 1377-79](#); *Nutrition 21 v. U.S.*, [930 F.2d 867, 871](#) (Fed. Cir. 1991). Absent an effort to meet this burden, a conclusion that the movant is unable to show a likelihood of success is proper. *Cf. Titan Tire Corp.*, [556 F.3d at 1377](#) (stating that the movant must satisfy its burden of pointing to contrary evidence “to avoid a conclusion that it is unable to show a likelihood of success”).

A patent is deemed invalid if its claims were anticipated or obvious in light of a “prior art,” *i.e.* an invention that predates the effective filing date of the asserted patent. See [35 U.S.C. §§ 102-103](#). Prior art “anticipates” a patent claim if it contains each and every claimed limitation. See *WM Wrigley Jr. Co. v. Cadbury Adams USA, LLC*, [683 F.3d 1356, 1361-62](#) (Fed. Cir. 2012); [35 U.S.C. § 102](#) (explaining that a person is not entitled to a patent if “the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise

available to the public before the effective filing date of the claimed invention”). A reference in a “printed publication” may be considered prior art if there is “sufficient proof of its dissemination or that it has otherwise been available and accessible to persons concerned with the art to which the document relates . . .” *Carella v. Starlight Archery & Pro Line Co.*, [804 F.2d 135, 139](#) (Fed. Cir. 1986) (quoting *In re Wyer*, [655 F.2d 221, 227](#) (C.C.P.A. 1981)). In order for a publication to anticipate an invention, “it is necessary that all of the elements of the invention or their equivalents be found in one single description or structure, where they do substantially the same work in substantially the same way.” *Tee-Pak, Inc. v. St. Regis Paper Co.*, [491 F.2d 1193, 1198](#) (6th Cir. 1974).

A claim is considered “obvious” if each and every claimed limitation is disclosed in one or more prior art references, and a person of ordinary skill in the art would be motivated to combine the references to arrive at the claimed invention. *See* [35 U.S.C. § 103\(a\)](#) (explaining that a patent may not be obtained “if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claims invention pertains”); *see also KSR Intern. Co. v. Teleflex Inc.*, [550 U.S. 398, 418-19](#) (2007) (noting that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does”); *Innogenetics, N.V. v. Abbott Labs.*, [512 F.3d 1363, 1374](#) (Fed. Cir. 2008) (explaining that “some kind of motivation must be shown from some source, so that the jury can understand why a person of ordinary skill would have thought of either combining two or more references or modifying one to achieve the patented method” (citation omitted))). When considering whether the subject matter of a patent claim is obvious, “neither the particular

motivation nor the avowed purpose of the patentee controls.” See *KSR Intern. Co.*, 550 U.S. at 419. Instead, “[w]hat matters is the objective reach of the claim.” See *id.* For example, one way a claim can be found obvious is if “there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims.” See *id.*

Unenforceability as a result of inequitable conduct is a similarly treated, but distinct concept from validity. See *Purdue Pharma L.P.*, 237 F.3d at 1366 (“[A]t trial, [the defendant] bears the ultimate burden of proving inequitable conduct by clear and convincing evidence, while [the patentee has] the burden on the preliminary injunction of showing that [the defendant’s] claim lacks substantial merit.”). As with other equitable considerations, a finding of inequitable conduct at the preliminary injunction stage is committed to the discretion of the trial court. *Id.* A defendant can set out an inequitable conduct claim by arguing and providing evidence that, among other things, the patentee failed to disclose material information during the patent prosecution process with an intent to deceive the USPTO. *Id.*; see also *Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc.*, 326 F.3d 1226, 1234 (Fed. Cir. 2003) (finding that an article which was *not* prior art was material to the enablement issue and explaining that “[m]ateriality is not limited to prior art but embraces *any* information that a reasonable examiner would be substantially likely to consider important in deciding whether to allow an application to issue as a patent”); USPTO, *Information Under 37 C.F.R. 1.56(a)*, MANUAL OF PATENT EXAMINING PROCEDURE § 2001.04, available at <https://www.uspto.gov/web/offices/pac/mpep/s2001.html#d0e195585> (last visited Dec. 3, 2020) (explaining that the information that must be disclosed is “all encompassing” and includes “litigation statements”). And, as with validity, when the defendant raises the issue at the preliminary injunction stage, the movant has the

burden to demonstrate that the inequitable conduct defense lacks substantial merit. *Purdue Pharma L.P.*, 237 F.3d at 1366.

Terves has not met its burden to establish that the defendants' validity and inequitable conduct challenges to the '653 patent and '740 patent lack substantial merit. *Purdue Pharma L.P.*, 237 F.3d at 1365-66; *Titan Tire Corp.*, 556 F.3d at 1377-79; *Nutrition 21*, 930 F.2d at 871. Although the defendants had set out a validity challenge in their answer to Terves's first amended complaint, Terves – properly, even if unwisely – punted on the issue and expressly declined to provide *any* validity analysis unless the defendants raised the issue in their responsive motion briefing. *Purdue Pharma L.P.*, 237 F.3d at 1365; ECF Doc. 31-1 at 15. When the defendants' responsive briefing argued that the '653 patent and '740 patent were invalid and proffered expert reports that – if accepted as true – established that prior art anticipated or rendered obvious the claims in the '653 patent and '740 patent, the defendants met their burden to field an argument that would raise a “substantial question” concerning validity. *Purdue Pharma L.P.*, 237 F.3d at 1365; 35 U.S.C. §§ 102-103; *WM Wrigley Jr. Co.*, 683 F.3d 1356, 1361-62; *Carella*, 804 F.2d at 139; *Tee-Pak, Inc.*, 491 F.2d at 1198; *KSR Intern. Co.*, 550 U.S. at 418-19; *Innogenetics, N.V.*, 512 F.3d at 1374; ECF Doc. 40 at 20-25; ECF Doc. 42 at 2, 6-13; ECF Doc. 64 at 2-9; ECF Doc. 65 at 2-9. Similarly, Terves was not initially required to set out an inequitable conduct avoidance argument in its initial motions. *See Purdue Pharma L.P.*, 237 F.3d at 1366. But the defendants set out an inequitable conduct argument in their responsive briefing. *See ECF Doc. 64 at 6-7*. At that point, Terves could no longer rest on the presumption that the '653 patent and '740 patent were valid and enforceable. *Pharma L.P.*, 237 F.3d at 1365. Terves was required to present an argument that the defendants' validity and inequitable conduct

challenges lacked substantial merit. *Purdue Pharma L.P.*, 237 F.3d at 1365-66; *Titan Tire Corp.*, 556 F.3d at 1377-79; *Nutrition 21*, 930 F.2d at 871.

But Terves still has not raised any argument that the defendants' validity and inequitable conduct challenges lack substantial merit. *See generally* CM/ECF for N.D. Ohio Case No. 1:19-cv-1611 (no reply brief filed). Terves's failure to raise such an argument comes not only after Terves had recognized its burden to do so in its initial brief, but also after the undersigned alerted Terves to the deficiency and indicated Terves could seek leave to file a reply brief out of rule. ECF Doc. 31-1 at 15; CM/ECF for N.D. Ohio Case No. 1:19-cv-1611, Minutes of Proceedings dated Nov. 23, 2020. And, although Terves has sought leave to submit *evidence* (Dr. Swanger's responsive expert report) that might support a validity argument were Terves to make one, this court's functions do not include the deployment of its own inductive reasoning to fabricate legal and factual arguments for one of the parties from a proffered piece of evidence. *Cf. McPherson v. Kelsey*, 125 F.3d 989, 995-96 (6th Cir. 1997) ("Issues adverted to in a perfunctory manner, unaccompanied by some effort at developed argumentation, are deemed waived. It is not sufficient for a party to mention a possible argument in the most skeletal way, leaving the court to . . . put flesh on its bones.") (quoting *Citizens Awareness Network, Inc. v. United States Nuclear Regulatory Comm'n*, 59 F.3d 284, 293-94 (1st Cir. 1995)); ECF Doc. 68-1; *see also* Section IV, below. Thus, because Terves has not briefed *any* argument to contend that defendants have not raised a "substantial question" on the validity issue, I conclude that Terves has not met its burden to establish that the '653 patent and '740 patents are not vulnerable to a validity challenge. As a result, Terves has not shown it is likely to succeed on the merits.⁵ *Titan*

⁵ Alternatively, the court could find that Terves has waived – for purposes of its preliminary injunction motions only – any argument that the defendants have not raised a substantial question as to the validity of the '653 patent and '740 patent by failing to raise such an argument in its briefing. *See Promega Corp. v. Life Techs. Corp.*, 875 F.3d 651, 661 (Fed. Cir. 2017) (stating that the Federal Circuit applies the waiver

Tire Corp., 556 F.3d at 1376-77; *Amazon.com, Inc.*, 239 F.3d at 1350-51. Likewise, because Terves has not briefed *any* argument (or any responsive evidence) confronting the defendants' inequitable conduct defense to the preliminary injunction, I conclude that Terves also has not met its burden to establish that the '740 patent is not vulnerable to an unenforceability challenge. As a result, it has not shown that it is likely to succeed on the merits.⁶ *Purdue Pharma L.P.*, 237 F.3d at 1366; *Titan Tire Corp.*, 556 F.3d at 1376-77; *Amazon.com, Inc.*, 239 F.3d at 1350-51.

Accordingly, I recommend that Terves's motions for a preliminary injunction (ECF Doc. 30; ECF Doc. 31; ECF Doc. 47) be DENIED.

4. Infringement

To show infringement, the movant must show that the accused product meets the claims set out in the patent. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) ("It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled to the right to exclude."). In evaluating whether an accused product meets the claims set out in the relevant patent, courts often must construe the claims of the patent and compare the construed claims to the accused product. *Tinnus Enters., LLC v. Telebrands Corp.*, 846 F.3d 1190, 1203 (Fed. Cir. 2017) (citing *Advanced Steel Recovery, LLC v. X-Body Equip., Inc.*, 808 F.3d 1313, 1316 (Fed. Cir. 2015)). Claim construction is a matter of law "exclusively within the province of the court." *Markman v. Westview Instrs., Inc.*, 517 U.S. 370, 372 (1996).

law of the regional circuit); *Glidden Co. v. Kinsella*, 386 F. App'x 535, 544 n.2 (citing *Murr. v. United States*, 200 F.3d 895, 902 n.1 (6th Cir. 2000)) ("A party's failure to raise an argument before [a] magistrate judge constitutes a waiver.").

⁶ Terves *did* file a motion to dismiss the inequitable conduct claims in the defendants' answer on November 25, 2020. ECF Doc. 69. But this motion to dismiss is not responsive briefing in the preliminary injunction proceedings and, even if successful, would not as a matter of rule conclusively establish that the defendants could never assert a colorable inequitable conduct claim. *See, e.g., Sun Microsystems v. Dataram Corp.*, No. 96-20708, 1997 U.S. Dist. LEXIS 4557, at *12-14 (dismissing an inequitable conduct claim *without prejudice*).

Both parties have submitted extensive briefing on claim construction and infringement and bolstered their arguments with expert reports supporting their respective positions. *See* ECF Doc. 30-2; ECF Doc. 31-1 at 6, 9-11; EF Doc. 37; ECF Doc. 36; ECF Doc. 40 at 20-25; ECF Doc. 42; ECF Doc. 45; ECF Doc. 46; ECF Doc. 47-1 at 1-2; ECF Doc. 48; ECF Doc. 64 at 2-9; ECF Doc. 65. Arguably, the defendant's production of expert reports supporting their argument that the magnesium materials they imported did not infringe upon Terves's patents could be found to raise a "substantial question" on the issue of infringement sufficient to defeat Terves's argument that it is likely to succeed on the merits of its claims. *Amazon.com, Inc.*, 239 F.3d at 1350-51; *Phillips*, 415 F.3d at 1312; *Tinnus Enters., LLC*, 846 F.3d at 1203. Nevertheless, such a finding would be premature when the parties' competing expert reports have not been subject to cross-examination at an evidentiary hearing. *See Certified Restoration Dry Cleaning Network, L.L.C. v. Tenke Corp.*, 511 F.3d 535, 553 (6th Cir. 2007) (no evidentiary hearing is required when there is no genuine issue of material fact); *cf. Warner Chilcott Labs. Ireland Ltd. v. Mylan Pharms., Inc.*, 451 F. App'x 935, 939 (Fed. Cir. 2011) (stating that a preliminary injunction cannot be *granted* without an evidentiary hearing when *granting* the injunction would require resolution of disputed facts). Because I recommend that Terves's motion for preliminary injunction be denied without an evidentiary hearing on the basis of Terves's failure to meet its burden to show that its patents are not vulnerable to a validity challenge and that alone is a sufficient basis for denying the motion, I will not recommend a finding on the issue of infringement.

C. Irreparable Harm

1. The Parties' Arguments

Terves argues that it will be irreparably harmed if the defendants are not preliminarily enjoined from continuing to import infringing magnesium materials. [ECF Doc. 31-1 at 12-18](#); [ECF Doc. 47-1 at 2](#). Terves's myriad bases upon which it believes it will be irreparably harmed include: (1) loss of market share compounded by its lack of diversification; (2) price erosion for dissolvable wrought magnesium; (3) loss of customers; (4) potential insolvency and an inability to meet capital debts; (5) Ecometal and Yuan's "judgment-proof" status, due to their lack of tangible assets, the fact that they're Canadian, the possibility that their money is "in Chinese banks or other offshore accounts," and the possibility that Ecometal could be dissolved if it loses this case; (6) loss of reputation for the exclusivity of its product; and (7) direct competition against Ecometal. [ECF Doc. 31-1 at 12-18](#); [ECF Doc. 47-1 at 2](#).

Ecometal responds that the court should deny Terves's motion for preliminary injunction because Terves has failed to show that it would suffer irreparable harm without an injunction. [ECF Doc. 40 at 7, 14-20](#); [ECF Doc. 64 at 2](#). Specifically, Ecometal argues that Terves cannot show irreparable harm because: (1) it has not proven that any alleged harm (loss of market share, loss of customers, loss of exclusivity reputation, potential insolvency) was caused by Ecometal and not a different competitor; (2) Terves has not shown that it has lost any customers to Ecometal, which sells exclusively to one buyer and that buyer provides materials only to one end-user, both of which are not former Terves customers; (3) the price drop for magnesium alloys began with a different importer that Terves has not identified; and (4) Terves did not show that there is a connection between the claims in the patent and the demand for the accused products. [ECF Doc. 40 at 14-20](#); [ECF Doc. 64 at 2](#).

2. Irreparable Harm Standard

A showing of likelihood of success on the merits is not the end of the preliminary injunctive relief inquiry. A movant must also demonstrate that it would suffer irreparable harm if a preliminary injunction does not issue. *See Apple, Inc. v. Samsung Elecs. Co., Ltd.*, 695 F.3d 1370, 1374 (Fed. Cir. 2012) (“Apple II”) (explaining that a patentee “must make a clear showing that it is at risk of irreparable harm, which entails showing a likelihood of substantial and immediate irreparable injury.” (quoting *Apple, Inc. v. Samsung Elecs. Co., Ltd.*, 678 F.3d 1314, 1325 (Fed. Cir. 2012) (“Apple I”))). A patentee’s “harm from the denial of a preliminary injunction is irreparable if it is not fully compensable by monetary damages.” *See Overstreet v. Lexington-Fayette Urban Cty. Gov’t*, 305 F.3d 566, 576 (6th Cir. 2002); *see also Celsis in Vitro, Inc. v. CellzDirect, Inc.*, 664 F.3d 922, 930 (Fed. Cir. 2012) (explaining that “the irreparable harm inquiry seeks to measure harms that no damages payments, however great, could address.”). The patentee “must also establish that the harm is sufficiently related to the infringement.” *Apple I*, 695 F.3d at 1374. Thus, to satisfy the irreparable harm requirement, the movant must demonstrate that: (1) absent an injunction, it will suffer irreparable harm; and (2) there is a sufficiently strong casual nexus relating the alleged harm to the alleged infringement. *Id.*

In determining whether a movant has met its burden to show that it will suffer irreparable harm, courts look to numerous factors and the specific circumstances of the case. *Cf. eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 393-94 (2006) (rejecting the application of a categorical rule that a movant’s licensing of its patent precludes a showing of irreparable harm and directing courts consider the particular circumstances of the case and exercise their discretion “consistent with traditional principles of equity”). Factors that might weigh in favor of a finding of

irreparable harm include: (1) loss of market share and customers; (2) price erosion; (3) loss of brand recognition or reputation; (4) workforce reduction; (5) direct competition in a market dominated by two manufacturers (the movant and the alleged infringer); and (6) the likelihood that a judgment would not be collectable or enforceable against the nonmovant. *Celsis in Vitro, Inc. v. CellzDirect, Inc.*, [664 F.3d 922, 930](#) (Fed. Cir. 2012) (“Price erosion, loss of goodwill, damage to reputation, and loss of business opportunities are all valid grounds for finding irreparable harm.”); *Metalcraft of Mayville, Inc. v. Toro Co.*, [848 F.3d 1358, 1368](#) (Fed. Cir. 2017) (loss of a particularly important, “lifelong” customer); *Standard Havens Prods. v. Gencor Indus.*, [897 F.2d 511, 515](#) (employee layoffs, immediate insolvency, and extinction); *Trebro Mfg. v. Firefly Equip., LLC*, [748 F.3d 1159, 1170](#) (Fed. Cir. 2014) (loss of market share, loss of customers, and employee layoffs); *Douglas Dynamics, LLC v. Buyers Prods. Co.*, [717 F.3d 1337, 1345](#) (Fed. Cir. 2013) (direct competition); *Presidio Components, Inc. v. Am. Tech Ceramics Corp.*, [702 F.3d 1351, 1363](#) (Fed. Cir. 2012) (direct and substantial competition for the same customers); *Canon, Inc. v. GCC Int’l, Ltd.*, [263 F. App’x 57, 62](#) (Fed. Cir. 2008) (“little probability that [the movant] could effect the collection of a money judgment”). Factors that might weigh against a finding of irreparable harm include: (1) the movant’s delay in seeking relief; (2) availability of calculable money damages or likelihood that money damages could adequately compensate the plaintiff; (3) the likelihood that the movant’s sales would be diminished regardless of the infringing product; (4) that any alleged harm is insubstantial or trifling; (5) the existence of multiple other market players⁷ with similar or greater market share than the nonmovant; and (6) the lack of a causal nexus between the alleged harm and the alleged infringement. *Apple I*, [678 F.3d at 1324-26](#) (delay in seeking a preliminary injunction, “merely

⁷ But not other infringers. See *Pfizer, Inc. v. Teva Pharms. USA, Inc.*, [429 F.3d 1364, 1381](#) (Fed. Cir. 2005) (“The act that other infringers may be in the marketplace does not negate irreparable harm.”).

trifling” harm, last sales notwithstanding the accused product, availability of calculable damages); *Apple II*, 695 F.3d at 1374-75 (causal nexus, infringing feature drives demand for the accused product); *EcoServices, LLC v. Certified Aviation Servs., LLC*, 340 F. Supp. 3d 1004, 1024 (C.D. Cal. 2018) (“Because Plaintiff has lost customers to competitors other than Defendant, this does not favor a finding of irreparable harm.” (citing *Belden Techs. Inc. v. Superior Essex Commc’ns LP*, 802 F. Supp. 2d, 555, 577 (D. Del. 2011) (finding no irreparable harm when “plaintiffs and defendants are not the only competitors in [a] multi-supplier market”), and *Apple I*, 678 F.3d 1324-25 (“A mere showing that [plaintiff] might lose some insubstantial market share as a result of [Defendant’s] infringement is not enough.”))).

3. Analysis

As discussed in greater detail below, I find that Terves has not met its burden to show that it is likely to suffer irreparable harm if an injunction does not issue. And this conclusion can be reached without an evidentiary hearing because the evidence and briefing in the record is insufficient to create a genuine issue of fact as to whether Terves is likely to suffer irreparable harm. See *Certified Restoration Dry Cleaning Network, L.L.C. v. Tenke Corp.*, 511 F.3d 535, 553 (6th Cir. 2007) (no evidentiary hearing is required when there is no genuine issue of material fact); cf. *Warner Chilcott Labs. Ireland Ltd. v. Mylan Pharms., Inc.*, 451 F. App’x 935, 939 (Fed. Cir. 2011) (stating that a preliminary injunction cannot be *granted* without an evidentiary hearing when *granting* the injunction would require resolution of disputed facts).

a. Loss of Market Share, Price Erosion, Loss of Customers, Loss of Exclusivity, and Competition

One of the key issues that must be resolved in order to address Terves’s claims that it has lost market share, experienced price erosion, and lost exclusivity in the market is: how should the market for Terves’s product be framed? Neither party has specifically addressed this issue. See

generally ECF Doc. 30; ECF Doc. 31-1; ECF Doc. 40; ECF Doc. 41; ECF Doc. 47-1; ECF Doc.

64. Based on the record, however, there are two options: (1) the market for dissolvable products for use in the manufacture of tools in the oil drilling industry; or (2) the market for dissolvable *cast magnesium* products for use in the manufacture of tools in the oil drilling industry.

Obviously, using the narrower frame – the market for dissolvable cast magnesium – would benefit Terves. But it makes little sense to apply that narrow framing. Terves’s own evidentiary submissions and Sherman’s deposition testimony indicate that Terves’s products compete against *all* dissolvable products used to manufacture tools in the oil drilling industry – dissolvable plastics, dissolvable aluminum, and dissolvable magnesium produced through powder metallurgy. See ECF Doc. 31-7 at 4-5; ECF Doc. 41-6 at 12-13 (sealed); ECF Doc. 41-7 at 2 (sealed) (indicating that the “Dissolvable Plug Market” was 4.7% magnesium products, 2.3% polymer products, and 93 % “composite” products in 2018).

Applying the broader view of the market in which Terves’s products compete, Terves has not shown that any lost market share, price erosion, lost customers, lost exclusivity, and increased competition has resulted from defendants’ activities. Instead, it is more likely that these alleged harms are of a more complex etiology. The myriad non-cast magnesium products against which Terves’s products compete are just as likely the cause of these harms as the defendants’ activities – especially when Terves’s own evidentiary submissions indicate that it lost its customers to *another unidentified competitor*, Terves has not submitted any evidence indicating that it tested the products its known-lost customers purchased from the unidentified competitor to determine whether *those products* were made of infringing material. That supports the inference that Terves can lose customers for reasons other than patent infringement. Moreover, because there appears to be no factual dispute that the defendants’ sole customer and

end-user was *never* a Terves customer, Terves cannot show that *those* sales were the result of the alleged infringement.⁸ See ECF Doc. 31-7 at 4-5, 9-10; ECF Doc. 41-2 (sealed declaration of defendants' customer); ECF Doc. 41-6 at 6, 12-13; ECF Doc. 41-8. This is also compounded by: (1) Sherman's deposition testimony, indicating that *a different tool manufacturer* was responsible for significantly more dissolvable tools in the market than the defendant's customer and end-user; and (2) Terves's charges indicating that it lost customers because its products were not price-competitive in *foreign* markets. *Apple I*, 678 F.3d at 1324-26; *EcoServices, LLC*, 340 F. Supp. 3d at 1024; ECF Doc. 41-6 at 9-10; ECF Doc. 41-7 at 2; ECF Doc. 41-8 at 9. At the very least, the record evidence weighs against an irreparable harm finding because it demonstrates that the defendants are only one of many competitors, several of which dominate a greater market share than defendants. *Apple I*, 678 F.3d at 1324-25; *EcoServices, LLC*, 340 F. Supp. 3d at 1024; *Belden Techs. Inc.*, 802 F. Supp. 2d at 577. In light of this evidence, I conclude that Terves has not created a genuine issue of fact, much less met its burden to show clear evidence, that there is: (1) a sufficient causal nexus between the defendants and the alleged lost market share, price erosion, lost customers, lost exclusivity, and increased competition; or (2) that the alleged harms would not continue if a preliminary injunction were issued. *Apple I*, 678 F.3d at 1324-25; *Apple II*, 695 F.3d at 1374-75.

b. Potential Insolvency & Layoffs

Terves's potential insolvency and layoffs argument is also unconvincing. Terves's own evidentiary submissions and Sherman's testimony indicate that the company began having

⁸ And the possibility that the defendants' customer was a potential customer is not enough to show "irreparable harm" – especially when that customer could have resorted to any of the myriad non-infringing, non-cast magnesium products in the market. See *Toxco Inc. v. Chu*, 724 F. Supp. 2d 16, 30 (D.D.C. 2010) (noting that an alleged harm must be concrete and not speculative); see also *Automated Merch. Sys. v. Crane Co.*, 357 F. App'x 297, 300 (Fed. Cir. 2009) (noting that a speculative loss of market share is insufficient).

financial difficulties after losing major customers to *competitors other than defendants*, but it weathered the storm by developing new products (such as dissolvable rubbers). [ECF Doc. 31-7 at 9-10](#); [ECF Doc. 41-6 at 7](#). Terves has not produced any evidence that it has begun to undertake layoffs or that its coffers are running dry. Instead, Terves's evidence that it *might* become insolvent is based on: (1) the fact that it must make payments as a result of its decision to take on capital debt, which it used to *expand* operations and equipment; and (2) lost sales. [ECF 31-7 at 10](#). But it is hard to draw (and Terves has not drawn) a causal nexus between Terves's choice to take on capital debt for *expansion* and defendants' activities. *Apple II*, [695 F.3d at 1374](#). And lost sales – absent the kinds of harms that I have already found Terves has failed to establish – is not an “irreparable harm,” but a harm that could be remedied by monetary damages. *See Automated Merch. Sys. v. Crane Co.*, [357 F. App'x 297, 300](#) (Fed. Cir. 2009) (“[L]ost sales standing alone are insufficient to prove irreparable harm . . . no matter how much evidence of lost revenue [plaintiff] presented . . .”); *Abbot Labs. V. Andrx Pharms., Inc.*, [452 F.3d 1331, 1348](#) (Fed. Cir. 2006). Further, Terves also indicates that the market pressures from COVID-19, the low price of oil, and its other competitors are also major factors in its loss of customers, possible insolvency, and potential layoffs. *See* [ECF Doc. 31-1 at 20](#). Moreover, Terves's nearly one-year delay in seeking preliminary injunctive relief after filing this action also casts doubt upon its prediction that it will become insolvent without a preliminary injunction. *Apple I*, [678 F.3d at 1324-26](#). Thus, I find that Terves has failed to meet its burden to show: (1) that there is a causal nexus between defendants' activities and Terves's speculation that it may become insolvent and undertake layoffs; (2) that Terves's speculative insolvency would be any less likely if the defendants were preliminarily enjoined; and (3) that monetary damages would be insufficient to remedy its alleged financial difficulties (lost sales and interest on capital

debt). *Apple II*, 695 F.3d at 1374-75; *Apple I*, 678 F.3d at 1324-25; *Overstreet*, 305 F.3d at 576; *Celsis in Vitro, Inc.*, 664 F.3d at 930.

c. Judgment-Proof Defendants

As with its other irreparable harm arguments, Terves's argument that defendants are "judgment-proof" is too speculative to satisfy its burden. Ordinarily, when a plaintiff alleges that a defendant is "judgment-proof," some kind of evidence must be adduced that shows that the defendant either does not have sufficient assets/funds to cover a judgment or that attempts to reach those assets would be futile. *See, e.g., SkyHawke Techs., LLC v. GolfzonDec, Inc.*, No. 19-1692, 2020 U.S. Dist. LEXIS 194303, at *31-32 (C.D. Cal., Aug. 3, 2020) (finding insufficient a single record of a defendant's profit and loss results from 2008 through 2017 showing a cumulative loss of \$6.9 million over 10 years because the record did "not contain any information about [the defendant's] assets and liabilities"); *see also Cordis Corp. v. Medtronic, Inc.*, 780 F.2d 991, 996 (Fed. Cir. 1985) (holding that the plaintiff "made no showing that [the defendant] is financially irresponsible or might be judgment-proof at the end of the litigation"). Terves has not shown that defendants are financially irresponsible, produced any evidence of any losses defendants might have experienced, or produced any evidence that the defendants lack assets. Instead, Terves says defendants are "judgment-proof" because: (1) Ecometal is an industry middleman; (2) defendants are Canadian; and (3) defendants have a relationship with China and, as a result, might have Chinese bank accounts. *See ECF Doc. 31-1 at 22-23*. But Ecometal's status as an industry middleman is not evidence of financial irresponsibility and that status, alone, does not establish that Ecometal is devoid of assets (including financial assets). *Cf. SkyHawke Techs., LLC*, 2020 U.S. Dist. LEXIS 194303, at *31-32. Likewise, that defendants have a relationship with China and *might* have Chinese bank accounts is too speculative to

establish that they are “judgment-proof.” *But cf. Canon Inc. v. GCC Int’l, Ltd.*, 450 F. Supp. 243, 255 (S.D.N.Y. 2006) (finding a defendant “judgment-proof” when the plaintiff had produced evidence that the defendants’ US assets totaled \$30,000 and defendants’ counsel indicated that he did not know where defendants’ bank accounts were located), *aff’d* 263 F. App’x 57 (Fed. Cir. 2008). And the remaining ground for finding defendants “judgment-proof” – that they are Canadian – is spurious in light of the Supreme Court of Canada’s enforcement-of-foreign-judgments decisions in *Beals v. Saldanha*, 2003 S.C.C. 72 (2003), *Pro Swing Inc. v. ELTA Golf Inc.*, 2006 S.C.C. 52 (2006), and *Chevron Corp., et al. v. Yaiguaje, et al.*, 2015 S.C.C. 42 (2015). Thus, I find that Terves has not met its burden to show that it is likely to suffer irreparable harm as a result of defendants being “judgment-proof.” *Apple II*, 695 F.3d at 1374.

In sum, Terves’s briefing and evidentiary submissions do not create a genuine issue (much less make a clear showing necessary to satisfy its burden) that it will be irreparably harmed if it is not granted a preliminary injunction. *Apple II*, 695 F.3d at 1374-75; *Amazon.com, Inc.*, 239 F.3d at 1350. Accordingly, I recommend that Terves’s motions for a preliminary injunction (ECF Doc. 30; ECF Doc. 31; ECF Doc. 47) be DENIED on this additional basis.

IV. Motion for Leave to File Rebuttal Expert Report

In its “unopposed motion for leave to file rebuttal expert report,” Terves correctly notes that Fed. R. Civ. P. 6(b)(1)(B) governs whether leave should be granted to file a reply (or other responsive material) after the time for doing so has expired. ECF Doc. 68 at 1. Under that rule, a party seeking to make a filing after time for doing so has expired must show: (1) good cause for the extension; and (2) that the failure to act before the expiration of the deadline was the result of excusable neglect. Fed. R. Civ. P. 6(b)(1)(B).

Terves asserts that “[g]ood cause exists because of the lack of clarity under the Federal Rules of Civil Procedure, the Local Patent Rules, and the Local Rules as to the deadlines for supplemental rebuttal reports” [ECF Doc. 68 at 1](#). Terves – despite direction from the court – misunderstands its deficiency here. As the court stated during the status conference and noted in its minutes, Terves has not filed a *reply brief*. A *reply brief* is necessary to set forth a legal argument that the defendants’ invalidity and inequitable conduct challenges lack substantial merit, and the mere submission of evidence that should be appended to a *reply brief* as support for the arguments therein is not enough. *Cf. McPherson*, [125 F.3d at 995-96](#) (“Issues adverted to in a perfunctory manner, unaccompanied by some effort at developed argumentation, are deemed waived. It is not sufficient for a party to mention a possible argument in the most skeletal way, leaving the court to . . . put flesh on its bones.” (quoting *Citizens Awareness Network, Inc.*, [59 F.3d at 293-94](#))). And Terves recognized that it would need to file such a *reply brief* setting forth such arguments in the initial motion brief that it filed in April 2020. [ECF Doc. 30-1 at 15](#) (sealed); [ECF Doc. 31-1 at 15](#) (redacted).

Notwithstanding that Terves has not sought leave to file a reply brief, its argument that the rules “lack clarity” is unavailing. The Local Rules plainly state that a reply to a response brief is due within 14 days after the response for a dispositive motion or 7 days after the response for a nondispositive motion. [N.D. Ohio L.R. 7.1\(e\)](#). This rule is nearly identical to *every other local rule in this circuit*. Compare [N.D. Ohio L.R. 7.1\(e\)](#), with S.D. Ohio L.R. 7.2(a)(3); W.D. Mich. L.R. 7.2(c), 7.3(c); E.D. Mich. L.R. 7.1(e); W.D. Ky. L.R. 7.1(c); E.D. Ky. L.R. 7.1(c); W.D. Tenn. L.R. 7.2(c); M.D. Tenn. L.R. 7.01(a)(4); E.D. Tenn. L.R. 7.1(a). If there is *any* confusion in these rules, it is not whether Terves had any deadline, but whether that deadline was

14 days or 7 days.⁹ [N.D. Ohio L.R. 7.1\(e\)](#). Even if Terves was confused about the applicable deadline, Terves has not provided any explanation why it did not seek clarification from the court regarding its deadline.¹⁰ In any event, Terves missed both deadlines by a lot. A reply to the defendants’ response brief related to the ’653 patent was due on July 20, 2020 if the 14-day deadline applied. *See* [ECF Doc. 41](#) (filed on Jul. 6, 2020). And a reply to the defendants’ response brief related to the ’740 patent was due on October 29, 2020. *See* [ECF Doc. 64](#) (filed on Oct. 15, 2020). Terves did not mention to the court its intent to file any responsive material until weeks later, on November 20, 2020.

Terves has also not shown that its failure to file any responsive material by the deadline or seek an extension to do so before the deadline expired, was the result of excusable neglect. In fact, Terves’ motion does not mention “excusable neglect” at all. *See generally* [ECF Doc. 68](#). At the very least, the court would have expected Terves to give some explanation – such as that: (1) it sought a responsive expert report soon after it received Dr. Medlin’s expert report regarding the validity of the ’653 patent in January, but it took Dr. Swanger over 11 months to produce it; (2) that it quickly sought to have Dr. Swanger update his report to address Dr. Medlin’s supplemental expert report addressing the ’740 patent (which was nearly identical to the report addressing the ’740 patent), but it took over one month for Dr. Swanger to update his report or produce a new one; or (3) that Terves inadvertently let the deadline slip. But no such explanation appears in Terves’s motion.

Simply put, Terves’s has not shown the “good cause” or “excusable neglect” that [Fed. R. Civ. P. 6\(b\)\(1\)\(B\)](#) requires. And, even Terves had made the requisite showing, the submission of

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¹⁰ This is especially perplexing when record demonstrates that the court was responsive to motions for clarification when filed. *See, e.g.*, [ECF Doc. 62](#).

an expert report alone would be futile when Terves failed to file (or seek leave to file) a reply brief raising an argument rebutting the defendants' validity and inequitable conduct challenges. See *McPherson*, 125 F.3d at 995-96. Thus, Terves's motion to file a rebuttal expert report after the deadline for filing a reply brief expired (ECF Doc. 68) will be DENIED.

V. Recommendation and Order

Because Terves has failed to meet its burden to demonstrate that the defendants' validity and inequitable conduct arguments lack substantial merit or that it would suffer irreparable harm absent a preliminary injunction, I recommend that Terves's motions for a preliminary injunction (ECF Doc. 30; ECF Doc. 31; ECF Doc. 47) be DENIED.

Dated: December 7, 2020


Thomas M. Parker
United States Magistrate Judge

OBJECTIONS

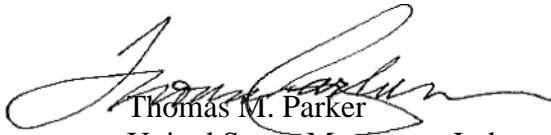
Any objections to this Report and Recommendation must be filed with the Clerk of Courts within fourteen (14) days after being served with a copy of this document. Failure to file objections within the specified time may waive the right to appeal the District Court's order. See *U.S. v. Walters*, 638 F.2d 947 (6th Cir. 1981). See also *Thomas v. Arn*, 474 U.S. 140 (1985), reh'g denied, 474 U.S. 1111 (1986).

Because Terves has failed to demonstrate the good cause and excusable neglect required to extend the time to file a reply, and because the expert report Terves seeks to file is not the *reply brief* necessary for Terves to raise legal arguments rebutting the defendants' validity and

inequitable conduct arguments, Terves's motion to file its expert report out of rule (ECF Doc. 68) is DENIED. Further, because Terves has failed to present a legal argument confronting the defendants' validity and inequitable conduct arguments and because Terves's briefing and evidence fail to set out a genuine issue of fact as to irreparable harm, an evidentiary hearing is not necessary to resolve Terves's motions for preliminary injunction. *See Certified Restoration Dry Cleaning Network, L.L.C.*, 511 F.3d at 553; *Warner Chilcott Labs. Ireland Ltd.*, 451 F. App'x at 939. Accordingly, the previously-entered non-document order granting Terves's motion for an evidentiary hearing is VACATED on the court's own motion, and Terves's motion for an evidentiary hearing (ECF Doc. 55) is DENIED.

IT IS SO ORDERED.

Dated: December 7, 2020


Thomas M. Parker
United States Magistrate Judge